

Notice of Allowability

Application No.

10/081,409

Examiner

Daniel S. Metzmaier

Applicant(s)

KAPILA ET AL.

Art Unit

1712

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 12/12/2003; 1/7/2004; & 3/24/2004.
2. ☒ The allowed claim(s) is/are 1-5,9-16,31 and 32.
3. ☐ The drawings filed on _____ are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☒ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☒ hereto or 2) ☒ to Paper No./Mail Date 03182003.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

EXAMINER'S AMENDMENT

Claims 1-5, 9-16, 31 and 32 are allowed.

Drawings

1. The drawings filed on February 21, 2002 are acceptable subject to correction of the informalities indicated on the attached "Notice of Draftsperson's Patent Drawing Review," PTO-948. In order to avoid abandonment of this application, correction is required in reply to the Office action. The correction will not be held in abeyance.

Examiner's amendment

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Dan Cleveland, Jr. on May 21, 2004.

The application has been amended as follows:

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Replace the claims as follows:

1. (Currently amended) A solvent extraction mixture for extracting oil from an oil bearing material, the solvent extraction mixture comprising:

oil bearing material that presents a combination of triglyceride oil and phospholipid oil for extraction; and

a solvent at a temperature ranging from 35°C to 55°C, the solvent having a viscosity ranging from 0.3 to 2.6 centipoise and a polarity index no greater than about 0.1, the solvent containing

- (a) a low molecular weight hydrocarbon constituent ; and,
- (b) a halocarbon constituent selected from the group consisting of fluorocarbon, chlorocarbon, and chlorofluorocarbon materials in an effective amount to provide selective extraction of the triglyceride oil in preference to the phospholipid oil, as compared to extraction using the hydrocarbon constituent.

2. (Previously Presented) The solvent extraction mixture of claim 1 wherein the hydrocarbon constituent is of a formula $C_nH_{(2n+2)}$ or C_nH_{2n} with n equal to between 5 and 8.

3. (Previously Presented) The solvent extraction mixture of claim 2 wherein the hydrocarbon constituent is a hexane.

4. (Currently amended) The solvent extraction mixture of claim 1 wherein said the halocarbon constituent is selected as the fluorocarbon having a polarity index of less than 0.4 0.

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5. (Currently amended) The solvent extraction mixture of claim [[4]] 1 wherein the fluorocarbon has a polarity index ranging between about - 2.0 and about 0.1 and a dielectric constant ranging between about 1.7 and about 2.0.

6. (Cancelled)

7. (Cancelled)

8. (Cancelled)

9. (Previously Presented) The solvent extraction mixture of claim 3 wherein the hexane is selected from the group consisting of straight-chained hexanes, branch-chained hexanes, and mixtures thereof.

10. (Previously Presented) The solvent extraction mixture of claim 1 wherein said the halocarbon constituent is selected as the fluorocarbon further selected from the group consisting of $C_nH_{(2n+2)-x}F_x$, where n equals between 4-8 and x equals between 1-17; $C_nF_{(2n+2)}$, where n equals between 5-8; $C_nCl_{(2n+2)-x}F_x$, where n equals between 1-6 and x equals between 1-13; $C_nH_{(2n+2)-(x+f)}Cl_xF_f$, where n equals between 1-4, x equals between 1-9, and f equals between 1-9; and, $C_nH_{(2n+2)-x}Cl_x$, where n equals between 1-4, and x equals between 1-9.

11. (Previously Presented) The solvent extraction mixture of claim 10 wherein the fluorocarbon is selected from the group consisting of $C_5H_2F_{10}$, C_6HF_{13} , C_7HF_{15} , $C_{10}HF_{21}$, C_5F_{12} , C_7F_{16} , C_6F_{14} , C_8F_{18} , $C_2Cl_3F_3$, CCl_3F , $C_3Cl_2F_6$, $C_4Cl_2F_8$, $C_4Cl_3F_7$, C_6ClF_{13} , $C_3HCl_2F_5$, and $C_2HCl_2F_3$.

12. (Previously Presented) The solvent extraction mixture of claim 1 wherein the halocarbon constituent is selected as the fluorocarbon further selected from the

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group consisting of hydrofluorocarbon, perfluorocarbon, hydrochlorofluorocarbon, and combinations thereof.

13. (Previously Presented) The solvent extraction mixture of claim 1 wherein the halocarbon constituent is selected as the fluorocarbon is being a hydrofluorocarbon.

14. (Previously Presented) The solvent extraction mixture of claim 1 wherein the halocarbon constituent is selected as the fluorocarbon and the effective amount ranges between 60% and 70% by volume of the solvent.

15. (Cancelled)

16. (Previously Presented) A solvent extraction mixture for extracting oil from an oil bearing material, the solvent extraction mixture comprising:

oil-bearing material-that presents a combination of triglyceride oil and phospholipid oil for extraction; and

a solvent at a temperature ranging from 35° C to 55° C, the solvent having a viscosity ranging from 0.3 to 2.6 centipoise and a polarity index no greater than about 0, the solvent containing

- (a) a low molecular weight hydrocarbon constituent; and,
- (b) a halocarbon constituent in an effective amount to provide selective extraction of the triglyceride oil in preference to the phospholipid oil, as compared to extraction using the hydrocarbon constituent alone.

17 -30 (Cancelled)

31. (Previously presented) A solvent mixture for extracting oil from a soybean

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oil bearing material so as to form an extracted oil comprised of greater than 95% by weight triglycerides and other non-polar constituents, with said solvent having a polarity no greater than about 0 and a viscosity ranging between about 0.3 centipoise and about 2.6 centipoise, whereby the triglycerides are miscible in said solvent at a temperature ranging between about 35° C and about 55° C and after extraction of the triglycerides said solvent and the triglycerides form a miscella, and at a temperature ranging between about 15° C and about 25° C, said miscella will form distinct solvent and oil layers that can be separated, said solvent mixture comprising:

- (a) an amount of a low molecular weight hydrocarbon having a viscosity of less than 2.6 centipoise;
- (b) a fluorocarbon solvent or a chlorocarbon solvent wherein said chlorocarbon is selected from the group consisting of CH_2Cl_2 , $\text{C}_2\text{H}_3\text{Cl}_3$, and C_2HCl_3 ;

and wherein said fluorocarbon solvent is selected from the group consisting of $\text{C}_5\text{H}_2\text{F}_{10}$, C_6HF_{13} , C_7HF_{15} , $\text{C}_{10}\text{HF}_{21}$, C_5F_{12} , C_7F_{16} , C_8F_{18} , $\text{C}_2\text{Cl}_3\text{F}_3$, CCl_3F , $\text{C}_3\text{Cl}_2\text{F}_6$, $\text{C}_4\text{Cl}_2\text{F}_8$, $\text{C}_4\text{Cl}_3\text{F}_7$, and $\text{C}_6\text{ClF}_{13}$; and

soybean material that presents a combination of triglyceride oil and phospholipid oil for extraction.

the low molecular weight hydrocarbon constituent and the fluorocarbon solvent being present in effective amounts for selectively extracting the triglyceride oil while leaving the

phospholipid oil in the soybean materials such that crude oil to be extracted from the soybean oil bearing material has a phospholipid content of less than 0.1% by weight.

32. (Currently amended) A solvent mixture for extracting oil from an a soybean oil bearing material so as to form an extracted oil comprised of greater than 95% by weight non-polar constituents, with said solvent having a polarity no greater than about 0 and a viscosity less than about 2.6 centipoise, whereby the non-polar constituents are miscible in said solvent at a temperature ranging between about 35° C and about 55° C and after extraction of the non-polar constituents, said solvent and the non-polar constituents separate at a temperature ranging between about 15° C and about 25° C, forming distinct solvent and oil layers that can be separated, said solvent mixture comprising:

(a) an amount of a low molecular weight hydrocarbon;

(b) a non-polar halogenated solvent;

wherein said non-polar halogenated solvent is selected from the

group consisting of CH_2Cl_2 , $\text{C}_2\text{H}_3\text{Cl}_3$, C_2HCl_3 , $\text{C}_5\text{H}_2\text{F}_{10}$,

C_6HF_{13} , C_7HF_{15} , $\text{C}_{10}\text{HF}_{21}$, C_5F_{12} , C_7F_{16} , C_8F_{18} , $\text{C}_2\text{Cl}_3\text{F}_3$,

CCl_3F , $\text{C}_3\text{Cl}_2\text{F}_6$, $\text{C}_4\text{Cl}_2\text{F}_8$, $\text{C}_4\text{Cl}_3\text{F}_7$, and $\text{C}_6\text{ClF}_{13}$; and

soybean material that presents a combination of triglyceride oil and

phospholipid oil for extractions

the low molecular weight hydrocarbon and the non-polar

halogenated solvent being present in effective amounts for selectively extracting the triglyceride oil while leaving the phospholipid oil in the soybean material. such that crude oil to be extracted from the soybean oil bearing material has a phospholipid content of less than 0.1% by weight.

Reasons for allowance

3. The following is an examiner's statement of reasons for allowance: applicants' response obviates the issues of the last Office Action. The present amendments more clearly set forth the polarity index in claims 1, 4 and 5. Please note page 16.12, Simon J. Garrett (cited herein) regarding the polarity index range from -2.0 to 10.2.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

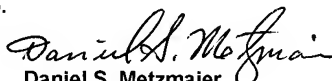
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel S. Metzmaier whose telephone number is (703) 308-0451. The examiner can normally be reached on 9:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272-1119. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Daniel S. Metzmaier
Primary Examiner
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DSM